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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/098,572	03/18/2002	Takahiro Kawaguchi	220881US2	3210
22850	7590	12/01/2003	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			COLILLA, DANIEL JAMES	
			ART UNIT	PAPER NUMBER
			2854	

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/098,572

Applicant(s)

KAWAGUCHI, TAKAHIRO

Examiner

Dan Colilla

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MW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 10-15, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuriyama et al.

With respect to claim 1, Kuriyama et al. discloses the claimed wire dot printer including an armature 6, a printing wire 10 fixed on one end to the armature 6 and an armature stopper 18. The armature 6 rocks against the stopper 18 which has two integrated layers, 4-a and 4-b. The layer 4-b is a hardened ceramic layer of TiN (see paragraph [0011] of the machine translation of Kuriyama et al.), and the layer 4-a is a polyimide resin film. Although Kuriyama et al. does not explicitly state that the layer 4-a is elastic, Kuriyama et al. does state that the resin film layer 4-a is softer than the rigid cured layer 4-b (Kuriyama et al., see "Constitution" of English abstract), and that it plays the role of a cushion for absorbing shock. In order to effectively absorb shock the layer 4-a must inherently be elastic at least to a certain extent. Otherwise, the bulk of the force of the armature would be transmitted through the layer 4-a without absorption. As mentioned above, the layer 4-b includes hardened TiN which has titanium as a component. When the armature rocks against the stopper, it collides against the hard layer 4-b as shown in Figure 3 of Kuriyama et al.

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-3 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga et al.

With respect to claim 2, Suga et al. discloses the claimed wire dot printer head except for the type of material used for the hard plate. Suga et al. discloses an armature 3, a printing wire 4, and an armature stopper 8,9. The armature stopper is comprised of a hard plate 9 and an elastic plate 8. While Suga et al. discloses using a hardened material called Permendur as the hard plate, it is disclosed that hard stainless steel is conventional in the art (see paragraphs [0003], [0008] and [0009] of the machine translation of Suga et al.). Additionally, while Suga et al. does not disclose the exact type of steel used, it would have been obvious to one of ordinary skill in the art through routine experimentation to choose whatever known steel that is needed based on its known properties. Furthermore, it is not known to the examiner if Suga et al. discloses a hardened steel or not, Suga et al. teaches that it is known to anneal (harden) a hard member in a stopper (see paragraph [0009] of the machine translation of Suga et al.). It would have been obvious to harden whatever hard member is used in a stopper for the advantage of the wear resistant surface hardening creates.

With respect to claim 3, as mentioned above although Suga et al. does not disclose the specific claimed type of steel it would have been obvious to one of ordinary skill in the art

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through routine experimentation to choose whatever known steel that is needed based on its known properties.

With respect to claim 16, Suga et al. discloses that the elastic sheet can be a fluororubber (see paragraph [0023] of the machine translation of Suga et al.).

With respect to claim 17, Suga et al. discloses the fluororubber as mentioned above and the method of baking is given no patentable weight in a product claim.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuriyama et al., as applied to claim 1 above, and further in view of Sanders, Jr. et al.

Kuriyama et al. discloses the claimed printer head except that it is not known to the examiner how the plates are attached. However, Sanders, Jr. et al. teaches that it is known to adhere an elastic plate to a hard plate in a printer head stopper (Sanders, Jr. et al., col. 9, lines 32-47). It would have been obvious to combine the teaching of Sanders, Jr. et al. with the printer head disclosed by Kuriyama et al. because adhesive is an inexpensive attaching means that does not disrupt the surface of the elements being attached.

6. Claims 8-9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga et al., as applied to claims 2-3 above, and further in view of Sanders, Jr. et al.

With respect to claims 8-9 and 18, Suga et al. discloses the claimed printer head except that it is not known to the examiner how the plates are attached. However, Sanders, Jr. et al. teaches that it is known to adhere an elastic plate to a hard plate in a printer head stopper (Sanders, Jr. et al., col. 9, lines 32-47). It would have been obvious to combine the teaching of

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Sanders, Jr. et al. with the printer head disclosed by Suga et al. because adhesive is an inexpensive attaching means that does not disrupt the surface of the elements being attached.

***Allowable Subject Matter***

7. Claims 10-15 and 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

8. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

The examiner agrees that the Takeuchi reference was applied in error and does not disclose an armature that rocks so that it collides with the hard plate. However, the newly found references to Suga et al. and Kuriyama et al. do teach such a structure.

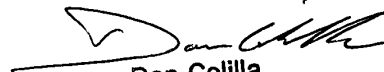
In response to applicant's argument that the Sanders, Jr. et al. reference does not create a proper combination with the Takeuchi reference (this response being applicable to the newly set rejections as well), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; *nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.* See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Colilla whose telephone number is (703) 308-2259. The examiner can normally be reached M-F, 8:30-5:30. Faxes regarding this application can be sent to (703) 872 - 9306.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached at (703)305-6619. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

November 25, 2003



Dan Colilla  
Primary Examiner  
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